

trends are reviewed. In one appendix there is a list of all the carbonization plants in the United States.

About one-third of the book is devoted to the recovery and utilization of by-products. This section is informative and gives a very useful survey. The account of the gas industry is limited to some seventeen pages, and it is here that the book fails to give a balanced picture of modern gas-works practice. Reference is made to the growing interest in the United States in low-temperature carbonization; but processes operated within the United Kingdom are not described.

The book fulfils a useful purpose in reviewing the carbonization industry in the United States; it has endeavoured to cover a wide field in a limited space with considerable success. The printing and reproduction of diagrams and photographs are good.

A. C. MONKHOUSE

Tests for Colour-Blindness

By Prof. Shinobu Ishihara. (Published for Nippon Isho Shuppan Co., Ltd.) Tenth completely revised edition. Pp. 27+38 plates. (London: H. K. Lewis and Co., Ltd., 1951.) 75s. net.

PROBABLY the best known of the confusion chart tests for defective colour vision is the Ishihara series, in which the subject is required to read a number made up of coloured dots printed against a background of a different colour. By the appropriate choice of colours, the various charts have been designed so that the colour defective may either misread the number or fail to read any number at all. The charts may also be a guide to the type and degree of defect depending on the mistakes made by the subject.

During the Second World War, the charts were unobtainable from Japan, and Messrs. H. K. Lewis and Co., Ltd., produced an English edition which proved a very effective substitute. Now a tenth Japanese edition has been produced and is obtainable from Messrs. Lewis, who are acting as agents for the Japanese publisher, the English edition having been discontinued. The underlying principles of the charts are sound, and the merits of different editions depend on how successfully the quality of the colour-printing is maintained. Extensive tests carried out a few years ago in the United States showed significant variations between different editions, and only time will show how the new edition ranks with the old. In some of the charts the colours are darker and more saturated than in the earlier sixth and seventh editions, so that some inconsistency in the subject's reactions may appear. One or two new charts have been added which increase the versatility of the test, and perhaps, in a future edition, charts for testing tritanopia, the blue-green deficiency, could be included.

W. D. WRIGHT

Name this Insect

By Eric Fitch Daghish. Pp. xxvi+294+64 plates. (London: J. M. Dent and Sons, Ltd., 1952.) 15s. net.

IDENTIFICATION of insects is a difficult subject for the non-specialist, the species being so numerous—more than twenty-one thousand in Britain—with many closely alike. Most popular books offer illustrated descriptions of a selection, through which laborious search is frequently necessary. "Name this Insect" is a notable attempt to make the search swifter and more direct.

Attractively written and produced, it begins with a simple exposition of structure and metamorphosis.

There follows a key to major groups of insects; thence the quest is directed to the appropriate chapter, which contains a general account of the group, and a key to the adults of a good selection of species (more than seven hundred altogether). The keys are largely non-technical, and opposite each species is a brief description with notes on habits, habitat, etc. Most of the 430 or so illustrations, of which more than eighty are in colour, are good and many excellent, but some are a little inaccurate.

The book will be useful to those for whom it is intended, but there are two inevitable criticisms. First, if a convincing identification is not achieved, the inquirer does not know if this is because he has somewhere made a mistake, or because the species has not been included. Second, the designed simplicity and breadth of field of the keys entails a lack of precision, and identifications will sometimes be incorrect. Careful checking with descriptions and illustrations is essential, and, unless these clearly fit, specialist books should be consulted if certainty is desired. Unfortunately, a list of these is not provided.

B. D. MORETON

From Atoms to Stars

By Dr. Martin Davidson. Third edition, revised and enlarged. Pp. 280. (London: Hutchinson's Scientific and Technical Publications, 1952.) 18s. net.

EVEN a short compendium of modern astronomical facts, theories and methods must perforce be presented fragmentarily in so small a book as this one of Dr. Martin Davidson. Items that especially interest the author, such as atom structure, comets, meteors and tidal theory, are represented by larger fragments. The whole of the universe beyond our local galaxy receives but a small fragment, as does the subject of stars, other than Cepheids, which are intrinsically variable. Some fragments seem to be missing, notably the interpretation of spectra in the light of atomic physics, the principle of the spectroheliograph and others on which so much present-day astronomical knowledge is based.

Nevertheless, in spite of an unbalanced effect, slips, misstatements and inadequate proof-reading, the book will help the reader whose interest in such matters has lapsed to bring himself up to date in certain particulars, especially if he is of a mathematical turn of mind. Assuredly the reader will not have to complain that this department is represented by an inadequate fragment; indeed, if he does as the author suggests in the preface to the first edition, and checks the mathematics for himself, he may spend some profitable hours.

Commendable features are the bibliography and the index.

F. M. HOLBORN

Chymia

Annual Studies in the History of Chemistry. (Edgar F. Smith Memorial Collection.) Vol. 3. Henry M. Leicester (editor-in-chief). Pp. ix+251+15 plates. (Philadelphia: University of Pennsylvania Press; London: Oxford University Press, 1950.) 36s. net.

THIS volume contains thirteen papers dealing with various aspects of the history of chemistry and alchemy. Those on Lavoisier's apparatus, early American chemical societies, and on a comparison of Boyle the chemist and Bayle the historian, may be mentioned as examples of the wide range of interests. The publication has taken its place among the journals dealing with the history of chemistry, and the standard of the articles is being maintained.